No. 9800260

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

University of Georgia Research Foundation, Inc. (UGARF) and
Florida Agricultural Experiment Station (FAES)

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN ING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PR ION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS IFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIG TAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT, COMMON

'Roberts'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this twelfth day of September, in the year two thousand one.

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.*

FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*

(UGARF)
University of Georgia Research Foundation, Inc.
and Florida Agricultural Experiment Stations(FAES)

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

GA871339E18

3. VARIETY NAME

Roberts

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*

Boyd Graduate Studies Research Center, Rm. 630
D. W. Brooks Drive
Athens, GA 30602-7411

5. TELEPHONE *(include area code)*

706-542-6512

6. FAX *(include area code)*

706-542-5901

FOR OFFICIAL USE ONLY

PVPO NUMBER

9800260

FILING DATE

05/18/98

9805.40

7. GENUS AND SPECIES NAME

Triticum aestivum

8. FAMILY NAME *(Botanical)*

Gramineae

9. CROP KIND NAME *(Common name)*

Wheat, common

FEES RECEIVED

FILING AND EXAMINATION FEE:

$ 2450.00

DATE

5/18/1998

CERTIFICATION FEE:

$ 320.00

DATE

8/27/01

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*

Corporation (UGARF) and University

11. IF INCORPORATED, GIVE STATE OF INCORPORATION

Georgia (UGARF)

12. DATE OF INCORPORATION

November 17, 1978

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

University of Georgia Research Foundation and Florida Agricultural Experiment Stations c/o John Ingle
630 Boyd Graduate Studies Research Center
Athens, GA 30602-7411

14. TELEPHONE *(include area code)*

706-542-6512

15. FAX *(include area code)*

706-542-5901

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

a. [X] Exhibit A. Origin and Breeding History of the Variety
b. [X] Exhibit B. Statement of Distinctness
c. [X] Exhibit C. Objective Description of the Variety
d. [X] Exhibit D. Additional Description of the Variety *(Optional)*
e. [X] Exhibit E. Statement of the Basis of the Applicant's Ownership
f. [X] Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository)*
g. [X] Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*

[X] YES *(If "yes," answer items 18 and 19 below)* [ ] NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

[X] YES [ ] NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

[X] FOUNDATION [ ] REGISTERED [X] CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?

[ ] YES *(If "yes," give names of countries and dates)* [X] NO

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
NAME *(Please print or type)* Joe L. Key		NAME *(Please print or type)*	
CAPACITY OR TITLE Executive Vice President	DATE 5-12-98	CAPACITY OR TITLE	DATE

9800260

Exhibit A
Origin and Breeding History of Roberts

'Roberts', soft red winter wheat (Triticum aestivum L.), was cooperatively developed and released by the Georgia and Florida Agricultural Experiment Stations in 1997. Roberts has a combination of high yield, good disease resistance, and late maturing. Roberts was derived from the 'GA Gore'/Coker 86-31 cross made in 1987 (1). Coker 86-31, ('Coker 68-15' *3/'McNair 1813'//'Coker 797') was evaluated in the Uniform Soft Red Winter Wheat Nursery in 1987. The F_1 was grown in the greenhouse during the spring of 1988 The pedigree method of breeding with individual spike selections was made in the F_2 to F_5 generations with selections for resistance to leaf rust (caused by *Puccinia recondita* (Roberge ex Desmaz), powdery mildew (caused by *Erysiphe graminis* DC. f. sp. *tritici* Em. Marchal), and septoria nodorum blotch ((caused by Stagonospora nodorum (Berk) Castellani &E.G. Germano)). Roberts is the F_5-derived bulk of five F_8 headrows selected from 100 head rows. Breeder seed, produced in 1997, is in the F_{10} generation.

Roberts was evaluated for agronomic performance as GA 871339 in breeding nursery plots in 1993 (1 rep at two locations) and 1994 (4 rep at four locations), in state trials at five locations in 1995 thru 1997, and in the Uniform Southern Soft Red Winter Wheat Nursery at about 29 locations in 1997.

Roberts is late maturing, apically awnletted, white chaffed, medium statured (92 cm) at maturity with intermediate straw strength. During the 3 yrs (five locations' yr-1 in Georgia), Roberts averaged no different in grain yield than GA Dozier or Coker 9134 but was 8.4 bushels per acre higher than GA Dozier in North Georgia. It matures on average 4 days earlier than Coker 9134. Milling and baking quality characteristics of Roberts are rated as good for soft red winter wheat use by the USDA-Soft Wheat Quality Laboratory, Wooster, OH.

Roberts has remained uniform and stable in composition through five generations of selfing. Variants are limited to less than 1% and may include slightly taller, later in maturity, or awned plants.

Breeder seed of Roberts will be maintained by the Georgia Agric. Exp. Station, Georgia Station, Griffin, GA 30223-1797.

Revised Exhibit B for 'Roberts'

Novelty Statement

Roberts is a soft red winter wheat, apically awnletted, and white chaffed. It is most similar in appearance to Coker 9134 in plant type. However, Roberts has yellow green plant color at booting, no purple peduncle at maturity, and no hairiness of last internode of rachis whereas Coker 9134 is bleu green in plant color at booting, purple peduncle at maturity and present of hairiness of last internode of rachis.

Field test in Georgia has shown that Roberts has resistant to Hessian fly at Griffin, GA (5.3 % infested stems) while Coker 9134 is susceptible (42.7% infested stems) predominately biotype O, verified by USDA, Entomology Lab at Purdue University. Coker 9134 (Coker 87-13wh) has the resistant Hessian fly genes (H7H8) from Saluda which provide resistance to biotype E and Roberts has its resistant from GA Gore which is susceptible to biotype E in laboratory tests at USDA-ARS, Purdue University.

9800260

Average performance of GA 871339 and check cultivars for Hessian fly infestation in 1997 and 1998, Georgia.

Entry	% Infested stems		Immatures per stem	
	1997	1998	1997	1998
GA 871339	0b	5.3b	0.00b	0.08b
C 9134	19a	42.7a	0.37a	0.91a
LSD (.10)	16	20	0.42	0.57

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
COMMODITIES SCIENTIFIC SUPPORT DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
University of Georgia Research Foundation, Inc.

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
Boyd Graduate Studies Research Center, 6th Floor
D.W. Brooks Drive
Athens, Ga. 30602-7411

FOR OFFICIAL USE ONLY
PVPO NUMBER
9800260
VARIETY NAME OR TEMPORARY DESIGNATION
Roberts

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (*e.g.* [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____
[1] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____
[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:
[1][4][5] FIRST FLOWERING
[1][5][0] LAST FLOWERING

4. MATURITY (50% *Flowering*):
[0][4] NO. OF DAYS *EARLIER* THAN .....
[ ][ ] NO. OF DAYS *LATER* THAN .....
[7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Coker 9134

5. PLANT HEIGHT (*From soil level to top of head*):
[0][9][2] CM. HIGH
[ ][ ] CM. TALLER THAN .....
[1][2] CM. SHORTER THAN .....
[7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7 = Coker

6. PLANT COLOR AT BOOTING (*See reverse*):
[1] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[0][4] NO. OF NODES (*Originating from node above ground*)
[1] Waxy bloom: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[1][9] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[0][9] MM. LEAF WIDTH (*First leaf below flag leaf*)
[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1][8] CM. LEAF LENGTH (*First leaf below flag leaf*):

FORM LMGS 470-6 (6-82) (Formerly Form LPGS 470-6 (3-79), which may be used)

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3 = MID DENSE

[4] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) oblong

[2] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[2] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[0 8] CM. LENGTH [1 3] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[1] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[2] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[ ] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[ ] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[1] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[ ] Phenol reaction (See Instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[0 6] MM. LENGTH [0 3] MM. WIDTH [3 6] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[2] STEM RUST (Races) RTQQ

[2] LEAF RUST (Races) PLMO, TCBG TLGG, MBRL

[0] STRIPE RUST (Races) _____

[0] LOOSE SMUT

[1] POWDERY MILDEW YUMA, 127, PM4, MCIO, ASO

[0] BUNT

[1] OTHER (Specify) Leaf Rust MCJL, TCDL, LBBQ, SBJB, CBTB, PNML

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[ ] CEREAL LEAF BEETLE

[ ] OTHER (Specify) _____

HESSIAN FLY RACES: [1] GP [ ] A [1] B [1] C [2] O [1] D [1] E [ ] F [ ] G [2] M

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Coker 9134	Seed size	Coker 9134
Leaf size	Coker 9134	Seed shape	Coker 9134
Leaf color	Coker 9134	Coleoptile elongation	
Leaf carriage		Seedling pigmentation	

VO. HW 25 30 66

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

6

Exhibit D

Additional Description of Roberts

Roberts is a common soft red winter wheat, *Triticum aestivum* L. bred and developed by the University of Georgia, Georgia Agricultural Experiment Stations and developed jointly by Jerry W. Johnson and Ron D. Barnett with the University of Florida, Florida Agricultural Experimental Station.

Roberts is resistant to current predominant biotype (biotype O) of Hessian flies, (Mayetiola destructor (Say), moderately resistant to powdery mildew, (Erysiphe graminis DC. f. sp. tritici Em. Marchal), and moderately resistant to races of leaf rust, Puccinia recondita (Roberge ex Desmaz), in Georgia.

Information on the milling and baking quality characteristics is also included in a quality report. Additional information is presented in Tables 1-13 attached to this Exhibit.

Table 1. Average performance of GA 871339 and check cultivars in Elite Nursery at three locations (Plains, Griffin, Calhoun), 1994.

Entry	Yield Bu/A	Test Wt. lbs/bu[1]	Lodging %	Date Headed[1]	Height in
GA 871339	96.3a	57.3	53	4/04	32
C 9134	88.1b	57.8	45	4/08	37

[1] Plains and Griffin

Table 2. Average yield performance of GA 871339 and check cultivars over 2 years (1995-1996) at five locations in state performance trials.

	Location					
Entry	Tifton	Plains	Midville	Griffin	Calhoun	Average
GA 871339	52.2b	56.1a	66.6a	71.9a	65.8a	62.5a
Dozier	60.3a	58.5a	55.3a	67.1a	50.3a	58.3a
C 9134	52.5b	53.2a	62.6a	68.7a	60.8a	59.6a

Table 3. Average performance of GA 871339 and check cultivars over 2 years (1995-1996) in state performance trials.

Entry	Test Wt. lbs/bu	Lodging %	Date Headed	Height in
GA 871339	56.5a	24a	4/17	36
Dozier	57.4a	12b	4/20	35
C 9134	57.2a	18ab	4/20	39

Table 4. Average performance of GA 871339 and check cultivars over 2 years (1995-1996) in state performance trails.

Entry	Leaf Rust[1] %	Powdery Mildew$_2$ %	Hessian Fly %	BYD$_3$ %	Septoria nodorum$_4$ %
GA 871339	45a	0	0	2	7
Dozier	1b	5	3	5	8
C 9134	51a	12	5	0	15

[1] Tifton, Plains, 1995
[2] Tifton, Plains, Griffin, 1995
[3] Tifton, 1995
[4] Tifton, 1995 and Plains, 1996

Table 5. Average yield performance of GA 871339 and check cultivars over 3 years (1995-1997) at five locations in state performance trials.

	Location					Average		
Entry	**Tifton**	**Plains**	**Midville**	**Griffin**	**Calhoun**	**S. GA.**	**N. GA.**	**STATE**
GA 871339	**48.3b**	**46.5a**	**62.4a**	**70.0a**	**62.0b**	**52.4a**	**65.5bc**	**57.6ab**
Dozier	**58.4a**	**49.5a**	**54.0b**	**66.5a**	**47.6c**	**53.9a**	**57.1d**	**55.2b**
C 9134	**50.5ab**	**46.7a**	**62.0a**	**--**	**--**	**53.1a**	**--**	**--**
Jackson	**55.4ab**	**43.1a**	**60.7a**	**74.7a**	**73.1a**	**53.1a**	**73.4a**	**61.2a**
P 2628	**50.5b**	**44.8a**	**60.7a**	**70.5a**	**51.3c**	**52.0a**	**60.9cd**	**55.6b**
C 9803	**—**	**--**	**--**	**64.9a**	**64.0b**	**--**	**64.4bc**	**--**
P 2580	**--**	**--**	**--**	**73.1a**	**65.8b**	**--**	**69.6ab**	**--**

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Table 6. Average performance of GA 871339 and check cultivars over 5 locations and 3 years (1995-1997) in state performance trials.

Entry	Test Wt. lbs/bu	Date Headed	Lodging %	Height in.
GA 871339	55.7a	4-11	29a	37
Dozier	56.7a	4-16	10b	34
Jackson	56.9a	4-16	15ab	30
P 2628	56.3a	4-18	12b	37

Table 7. Average performance of GA 871339 and check cultivars at 2 locations (Griffin and Calhoun) over 3 years (1995-1997) in state performance trials.

Entry	Test Wt. lbs/bu	Date Headed	Lodging %	Height in.
GA 871339	57.9b	4-18	23a	37
Dozier	58.2b	4-22	9b	33
Jackson	58.8b	4-21	5b	40
P 2628	58.4b	4-21	2b	40
C 9803	60.5a	4-20	2b	38
P 2580	57.6b	4-20	12ab	38

Table 8. Average performance of GA 871339 and check cultivars over 3 years (1995-1997) in state performance trials..

Entry	Leaf Rust %	Powdery Mildew %	BYD %	Septoria Nodorum %
GA 871339	34a	6	12	10
Dozier	2b	4	16	14
C 9134	42a	17	5	13

Table 9. Average rating of leaf rust (%) of GA 871339 and check cultivars at Plains, Tifton, and Griffin in 1995 and 1997 in state performance trials.

	Tifton		Griffin
Entry	1995	1997	1995
GA 871339	0	5	1
Dozier	0	0	0
C 9134	3	6	--
Jackson	0	20	30
P 2628	35	95	10

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Table 10. Average performance of GA 871339 and check cultivars in Elite Nursery at Plains and Griffin, 1997.

Entry	Yield Bu/A	Test Wt. lbs/bu	Lodging %	Date Headed	Height in
GA 871339	65.6a	57.3	30	3/31	33
Dozier	59.1b	59.3	10	4/07	27
C 9134	47.1c	56.8	15	4/03	34
P 2628	41.6c	56.4	5	4/06	34

Table 11. Average performance of GA 871339 and check cultivars in other states performance trials and/or Uniform Southern Wheat Nursery (19 trials)++, 1997.

Entry	Yield Bu/A	Test Wt Lbs/Bu	Date Headed	Lodging %	Height inches	Leaf Rust, %	Powdery Mildew, %
Ga 871339	**75.1**	**58.0**	**4-15**	**30**	**37**	**11**	**6**
C 9835	**72.9**	**57.1**	**4-16**	**20**	**33**	**12**	**12**
PIO 2643	**69.5**	**57.3**	**4-15**	**30**	**31**	**26**	**4**

++ States and (number of Locations) tested: Arkansas (6) , Louisiana (1), Mississippi (2), North Carolina (4), South Carolina (4), Texas (1), Virginia (5).
Arkansas (Bay, Keiser, Kibler, Marianna, Rohwer, Hope); Louisiana (Baton Rouge); Mississippi (Raymond, Newton); North Carolina (Kinston, Bertie, Lendir, Washington); South Carolina (Simpson-early and late planting, Florence, Blacksville); Texas (Overton); Virginia (Blacksburg, Holland, Painter, Warsaw, Orange).

Table 12.

Hessian infestations in entries of the State Wheat Variety Trial at Griffin, GA in spring of 1997.

Entry	% Infested stems	Immatures per stem
• Clemens	80.0 *	3.07 *
• Coker 9803	60.0 *	1.67 *
• Jackson	58.7 *	1.71 *
■ GA-Dozier	57.3 *	1.25 *
Coker L910097	57.3 *	1.44 *
■ VA 93-52-60	54.7 *	1.16 *
• Featherstone 520	53.3 *	1.67 *
• Hunter	48.0 *	1.28 *
■ Coker 9134	42.7 *	0.91 *
• Clark	42.7 *	0.99 *
Agripro 92D+4413	42.7 *	0.95 *
Kucharek-A28	37.3 *	1.03 *
• GA 87467-E24	34.7 *	0.91 *
GA 891283-LE18	33.3 *	0.97 *
• Mason	33.3 *	1.07 *
Agratech FFR 522W	32.0 *	0.65 *
• Clemson 201	30.7 *	1.08 *
■ GA Gore	29.3 *	0.52
■ Madison	29.3 *	0.52
■ Florida 304	29.3 *	0.51
• Pioneer 2643	28.0 *	0.53
• Jaypee	26.7 *	0.59 *
■ Pioneer 2628	16.0	0.24
■ Pioneer 2580	16.0	0.33
■ Hickory	12.0	0.20
■ Coker 9835	10.7	0.25
■ Morey	10.7	0.21
■ GA Fleming (90078-I)	9.3	0.27
■ GA 87105-E43	8.0	0.20
■ Pioneer 2684	8.0	0.13
GA 881186-E48	5.3	0.08
■ GA 871339-E18	5.3	0.08
Coker 9663	5.3	0.08
GA 89482-E7	4.0	0.12
Pioneer 2691	4.0	0.09
FL 92944RCX	2.7	0.04
FL 931839A5	1.3	0.07
GA 81404-E56	1.3	0.01
GA 88130-LE5	0	0
■ GA Stuckey	0	0
LSD 0.1	19.9	0.57
LSD 0.05	23.9	0.69

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* indicates mean is significantly greater than zero ($P < 0.1$; LSD test).

• Susceptible in previous tests.

■ Resistant in previous tests.

9800260

Table 13.

Hessian infestations in entries of the State Wheat Variety Trial at Plains, GA in spring of 1997.

Entry	% Infested stems	Immatures per stem
• GA 87467-E24	16.0 *	0.28 *
Kucharek A28	16.0 *	0.21 *
• Featherstone 520	16.0 *	0.21 *
• Clemens	13.3 *	0.29 *
Agratech FFR 522W	12.0 *	0.32 *
• Pioneer 2643	12.0 *	0.16 *
• Coker 9803	12.0 *	0.13 *
• Mason	6.7	0.07
■ Madison	6.7	0.09
■ Pioneer 2580	6.7	0.08
Coker L910097	6.7	0.09
■ Morey	5.3	0.09
• Clemson 201	4.0	0.04
• Jackson	4.0	0.04
• Jaypee	4.0	0.04
Agripro 92D+4413	4.0	0.13
■ Hickory	2.7	0.03
■ Florida 304	2.7	0.03
Pioneer 2691	2.7	0.04
■ GA 87105-E43	2.7	0.03
• Hunter	2.7	0.08
Coker 9663	2.7	0.04
■ GA Gore	1.3	0.01
■ GA Dozier	1.3	0.01
Agratech FFR 502W	1.3	0.03
■ GA 871339-E18	1.3	0.01
■ Pioneer 2684	1.3	0.01
FL 92944RCX	1.3	0.01
• Clark	0	0
■ Coker 9134	0	0
■ Coker 9835	0	0
Agratech EX096W	0	0
■ Pioneer 2628	0	0
■ GA Stuckey	0	0
■ GA Fleming (90078-I)	0	0
FL 931839A5	0	0
GA 89482-E7	0	0
GA 881186-E48	0	0
GA 881404-E56	0	0
GA 881130-LE5	0	0
GA 891283-LE18	0	0
VA 93-52-60	0	0
LSD 0.1	7.9	0.13
LSD 0.05	9.4	0.16

* indicates mean is significantly greater than zero ($P < 0.1$; LSD test).
• Susceptible in previous trials.
■ Resistant in previous trials.

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LEAF RUST

Seedling reaction of entries of the 1996-97 Uniform Eastern Soft Red Wheat Performance Nursery to selected isolates of Puccinia recondita f. sp. tritici (D.L.Long, USDA-ARS, Cereal Rust Labortory, 1551 Lindig Street, St.Paul, MN 55108)

No.	Cultivar or Line	Reactions produced by NA race*										Postulated Seedling Lr genes**
		PLMQ	MCJL	TCDL	LBBQ	SBJB	TCBG	TLGG	CBTB	MBRL	PNML	
1	Cardinal	3	3-;	3	3	;/c	;	;	;	3;	3	10
2	Caldwell	;	3-;	3	3	3	3	3	3	3	;/c2	+
3	Pioneer 2548;	;3	;	;/c	3	;	;/c	;	3	;		11,+
4	Foster	;	3	;	;/c	;/c	3	;	;	;/c3	3-;	26,+
5	PA 8769-158\	;-3	3-;	3	3	3	3	3	3	3;	;-3	+
6	IL 90-6364	3	-	3	3	3	3	3;	3	3;	3	+
7	IL 90-7514	;	3-;	;	;/c-3	3-;	;/c	;-3	;-3	3-;	3	+
8	GA 871339	;	3	3	3;	3	;/c	;/c	3	;	3;	+
9	VA 94-52-25;	-	;	3-;	;	;	;	;	;	;/c2		+
10	VA 93-54-429	;2	3-;	;	3	;	;	;	;	;	;/c	10, 18,+
11	P88288c1-6-1-2	;3	3	3	3;	;3	;-3	;	;	;	3	10,+
12	P86958RC4-2-1-10	;	;	;/c	;3	;/c	;/c	3	;	;	;	+
13	KY86C-61-8;3	-	;	;	3;	;	;/c	;	;	;/c		+
14	SE 1614-3	-	;/c	3	-	;/c2	3	;	;	;	;/c	2a,26,+
15	G3566	;	-	-	3	3	3-;	;-3	-	-	3	+
16	G3782	3	3	-	-	3	3;	-	3	3	-	0
17	PA8969-181 3	3	3	3	;-3	;/c-3	;-3	3	3	3		0
18	PA8769-160 ;/c-3	3	3	3	3	3	3-;	3	3	;		0
19	A94-1048	3	;/c	;	;3	;	3	;	;	;	;/c	18,+
20	A93-6227	;2c3	;/c	;	;	3;	3	;	;	;	;	18,26
21	OH 536	3	3;	3;	;3	-	3	3	-	-	3;	18,+
22	OH 552	3	3	3	;	-	3	3;	3	-	3	+
23	OH 546	3	3	;	;	;	;	;	-	3	-	1,3,11
24	IL89-6489	3	3	;	;	;	3	;	;	3	3	+
25	L920043	;3	;/c	2c;	3	;	;	;	;	;/c	;	10,18,+
26	L920520	;	;/c	;	3	;/c	3;	3	;	;/c	3	18,+
27	L930605	;/c	2;	3;	-	;	;	;	;	;3	3-;	+
28	AR494B-2-2-	3	;3	3	3	3	3-;	;	3	3		+
29	AR584A-3-1 3	;	;	;	;	;	;	;	;	3		+
30	T95 3	3	3	3	3	3	3	3	3	3		0
31	T96 3	3	3	3	3	3	3	3-;	3	3		0
32	P91193D1-10-2	;	;	;	;	-	;-3	;-3	;	;	;	+
33	P91202RB1-3-3	;	;/c	-	;/c	;/c	;/c	-	;	-	;	+

*Single genes tested = 1, 2a, 2c, 3, 3ka, 9, 10, 11, 16, 17, 18, 24, 26, 30

Virulence Formula:

PLMQ = 1, 2c, 3, 3ka, 9, 10, 18, 30
MCJL = 1, 3, 10, 11, 17, 26
TCDL = 1, 2a, 2c, 3, 10, 17, 26
LBBQ = 1, 10, 18
SBJB = 1, 2a, 2c, 11, 17
TCBG = 1, 2a, 2c, 3, 18, 26
TLGG = 1, 2a, 2c, 3, 9, 11, 18
CBTB = 3, 3ka, 11, 17, 30
MBRL = 1, 3, 3ka, 10, 11, 30
PNML = 1, 2c, 3, 3ka, 9, 10, 24, 30

**0 = no gene(s) detected with these Lr combinations; + = Lr gene(s) present but unable to identify with these Lr virulence combinations

STEM RUST

Seedling reactions of the 1997 Eastern Soft Red Winter Wheat Performance Nursery to selected isolates of stem rust.
(D. V. McVey, USDA-ARS, Cereal Rust Laboratory, University of Minnesota. St. Paul, MN 55108.)

No	Line	QFCQ	RKRQ	RTQQ	RTRQ	TPMK
1	Cardinal	S	;1N	0	S?	S
2	Caldwell	;1	;1	1-N	S?	2-:S
3	Pioneer	;1	0	0;	;1N	2
4	Foster	;1	S	;1N:S	;1	2=
5	PA8769-158	;1	;1-	1-	;	1
6	IL 90-6364	1	;12-,S	11+	1,S	S,2=
7	IL 907514	1,S	;1,S	;1-,S	;1,S	S
8	GA 871339	;1N,S	;1N,S	;1N	;1N,S	S,2
9	VA94-52-25	;1	1,S	;	;1N	;
10	VA93-54---	1,S	;,S	;1N	S,;1	2=,S
11	P88288C1--	1,S	S,;	;,S	S,;1	2=,S
12	P86958RC--	S	2-,S	;	S,;1	S
13	KY86C-61-8	S	;	;1	S	S
14	SE 1614-3	;1	;1	;1	1	2=
15	G3566	-	1	;	-	2=
16	G3782	;1-N	2C	;1N	;	2=
17	PA8969-181	1,S	;	;1N,S	S	;
18	PA8769-160	2-	;N	;	;	S,2-
19	A94-1048	1	2C	;1	1	2=
20	A93-6227	2=	;	;	2=	2=
21	OH 536	-	S	;1N	-	S
22	OH 552	-	2=	2=	;1-N	S
23	OH 546	-	;1	1;1	S	S
24	IL 89-6489	1	S	1	S	2=
25	L920043	0	0;	1N	0	0
26	L920520	S	S	S	S	S
27	L930605	0,S	0	0,S	S	S
28	AR494B-2-2	0	0	0,S	S	S
29	AR584A-3-1	S	S	1	S	S
30	T95	0	0	;1N	;1-N	2=
31	T96	1	2C	S	S	S
32	P91193D1--	0	0	-	S	S
33	P1202RB1--	0	;1	;1-,S	-	;

Set I	Sr5	Sr21	Sr9e	Sr7b
Set II	Sr11	Sr6	Sr8	Sr9g
Set III	Sr36	Sr9b	Sr30	Sr13-17
Set IV	Sr9a	Sr9d	Sr10	Tmp

9800260

POWDERY MILDEW

Raleigh, NC

	Isolate	Yuma	127	Pm4	Mo10	F7-12	Aso	F7-11	3a	6	144	ABK	Axm	WKin91	#5	#8	E3-14	43a1	73b2	169-1b	#2	#7	#4	W72-2	#9	E3-25	85063	#10	E2-15	216a	153a2	121a1	156b1	101a2	43a2	137a1	93b2	152-2c	146-2a
	Axminster P	R	S	R	R	R	R	R	RS	R	R	S	S	S	I	S	R	RI	R	R	S	RI	I	S	RI	S	S	R	R	R	S	S	RI	RS	I	R	R	R	S
	Orestis Pm2	I	X	X	R	I	R	R	R	R	R	I	X	S	R	R	R	S	R	S	R	S	R	S	R	S	R	X	R	R	S	S	S	S	S	S	S	S	S
	Asosan Pm3	S	RI	S	S	S	S	I	S	S	R	X	S	S	X	R	R	S	S	R	R	S	R	R	S	R	R	R	R	I	S	S	S	S	S	S	R	IS
	Chul Pm3b	R	I	RI	R	RI	R	S	S	S	R	R	I	R	R	RI	R	I	R	R	X	IS	RI	R	RI	RI	RS	I	R	R	I	I	S	S	R	I	S	R	X
	Sonora Pm3	R	S	S	S	S	S	S	S	S	S	X	S	S	S	S	R	S	S	S	R	S	S	RS	S	S	R	S	S	R	S	S	S	S	S	S	S	S	S
	Yuma Pm4a	R	S	S	S	S	I	I	S	S	S	R	R	R	S	S	R	R	IS	IS	S	S	S	R	S	S	R	I	R	R	R	R	S	S	S	S	S	R	R
	Ronos Pm4b	RI	S	X	RI	R	R	R	R	R	I	I	R	R	R	S	I	I	R	I	S	S	R	R	S	S	R	I	RI	R	I	I	R	R	R	R	I	RI	X
	CI 14125 Pm	S	S	S	S	S	I	S	S	S	S	I	S	S	S	S	R	S	S	S	I	S	S	S	S	S	R	S	S	R	S	S	S	S	S	S	S	S	S
	C747 Pm6	RS	I	R	S	X	X	X	RS	IS	RI	I	R	I	X	R	X	RI	X	R	RI	RS	R	R	I	IS	I	S	R	R	IS	S	S	R	S	I	RI	R	RS
	Transec Pm7	S	S	S	S	S	S	S	S	S	S	S	S	RS	S	S	S	S	S	S	S	S	S	I	S	S	S	S	S	I	S	S	S	S	S	S	S	S	S
	Kavkaz Pm8	R	S	X	R	X	I	X	S	RI	S	X	RI	I	X	S	I	RI	I	S	S	R	S	X	S	S	S	S	RS	I	RS	I	RI	R	RS	RI	R	R	R
	Amigo Pm17	R	R	S	I	S	R	X	R	RS	R	R	I	I	R	R	X	S	X	R	R	I	S	I	R	X	S	X	R	R	I	X	S	R	R	I	R	S	R
	Mich Amber	S	S	S	S	S	S	I	S	S	RS	X	S	S	I	S	R	S	I	R	S	S	S	S	S	S	R	S	S	S	S	S	S	S	S	S	S	I	S
	Chancellor	S	S	S	S	S	S	I	S	S	S	S	S	S	S	S	IS	S	S	S	S	S	S	RI	S	S	S	S	S	S	S	S	S	S	S	S	S	S	RS
1	Cardinal	S	S	S	S	S	S	I	S	S	RS	S	S	S	RS	S	S	S	IS	S	RS	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
2	Caldwell	S	S	S	S	S	I	X	S	I	S	R	S	R	S	S	S	RS	S	S	S	S	S	R	S	S	R	S	S	RI	S	IS	S	S	S	S	S	S	RI
3	P2548	S	R	S	S	S	S	S	S	S	R	R	S	S	R	R	R	S	S	R	IS	S	RS	R	S	R	R	R	RI	S	S	S	S	S	S	S	S	R	S
4	Foster	R	X	R	R	X	R	X	I	R	R	X	R	I	R	IS	X	R	RI	R	X	RI	RI	S	RI	R	R	R	R	R	R	R	R	R	R	R	R	R	X
5	PA8769-158	S	S	S	S	S	I	I	S	I	S	I	S	S	IS	S	I	S	S	S	S	S	S	S	S	S	S	S	RS	S	S	S	S	S	S	S	S	I	S
6	IL90-6364	S	IS	S	S	S	S	I	S	S	RS	RS	S	S	R	RS	R	S	S	R	S	I	RS	RS	S	RS	R	S	R	S	RS	S	S	S	S	S	S	S	S
7	IL90-7514	I	RS	S	S	S	I	R	I	S	IS	S	I	I	S	S	I	S	S	RS	IS	S	I	S	S	I	RI	X	S	S	S	I	S	IS	S	S	I	I	I
8	GA871339	S	S	S	S	S	I	X	S	S	R	S	S	S	R	I	RS	S	S	RS	RS	S	R	S	S	S	R	R	S	S	S	S	S	S	S	S	R	S
9	VA94-52-25	R	R	R	R	X	R	R	R	R	R	R	S	S	R	RI	X	R	R	R	X	R	R	R	R	X	R	R	R	R	S	IS	R	RI	R	R	R	R	RI
10	VA93-54-429	R	S	I	I	RI	R	R	RI	RI	I	R	RI	R	IS	R	I	RI	R	RI	I	I	RI	R	I	I	R	RI	X	R	R	R	RI	RI	R	RI	I	RS	RI
11	P88288C161	S	RI	IS	S	S	RI	RI	I	RS	RS	RS	S	S	R	X	R	I	RI	R	R	I	R	S	RI	RS	RS	R	X	R	S	X	S	S	I	RS	IS	RI	I
12	P86958RC*	S	RI	S	S	RI	I	IS	IS	S	R	RS	S	S	R	X	S	S	S	R	RI	RI	RS	R	RI	RS	R	RI	X	S	S	X	S	S	S	S	S	R	S
13	KY86C-61-8	IS	IS	I	I	R	RI	I	I	I	I	I	I	IS	RI	R	I	IS	I	I	RI	I	RI	RI	RI	I	I	IS	I	IS	I	S	I	I	S	S	I	R	S
14	SE1614-3	R	S	X	R	R	R	R	R	R	S	R	R	RI	S	I	S	R	S	S	I	S	S	IS	S	S	S	S	RS	R	R	R	R	R	R	R	R	R	RS
15	G3566	S	IS	X	S	S	S	S	S	S	S	S	S	S	S	I	S	S	S	S	I	IS	S	S	S	S	S	S	S	I	S	S	S	S	S	S	S	S	S
16	G3782	S	S	S	S	S	I	S	I	S	S	S	S	S	S	RI	S	S	IS	S	I	S	S	S	I	S	S	S	S	S	IS	S	S	S	S	S	S	I
17	PA8969-181	S	S	S	I	S	I	I	I	I	S	S	S	S	S	S	I	S	I	S	I	S	R	IS	I	I	I	S	IS	IS	S	R	S	S	IS	S	S	S	S
18	PA8769-160	S	S	S	S	S	S	S	S	S	S	RS	S	S	S	S	IS	S	S	S	IS	S	S	S	S	S	S	S	S	IS	S	S	S	S	S	S	S	S	S
19	A94-1048	RI	S	R	R	R	R	RI	R	R	S	R	R	RI	S	S	IS	R	S	S	S	S	S	R	S	S	I	S	S	R	R	R	IS	R	RS	RS	R	R	S
20	A93-6227	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	IS	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
21	OH536	S	R	RS	S	S	I	IS	RI	S	R	R	IS	S	R	R	R	S	S	R	R	I	R	R	IS	R	R	R	R	R	S	I	S	S	S	S	S	R	I
22	0H552	S	RI	S	S	S	I	I	IS	S	R	R	S	S	R	R	R	S	RS	R	R	I	R	R	I	R	R	R	R	I	S	RI	S	S	S	S	S	R	S
23	0H546	S	R	S	S	S	S	I	S	RS	R	R	S	S	R	R	R	S	I	R	R	S	R	R	S	R	R	R	RI	IS	S	S	S	S	S	S	S	R	S
24	IL89-6489	S	S	S	S	S	S	I	S	I	S	S	S	S	S	S	S	S	S	S	I	S	S	IS	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
25	L920043	S	I	S	S	RS	S	I	S	IS	I	R	IS	S	I	I	R	S	S	I	I	X	S	R	S	IS	R	S	S	RI	S	I	S	S	S	S	RS	S	S
26	L920520	S	R	S	S	S	S	I	S	S	R	R	S	S	I	R	R	S	IS	R	R	S	R	R	S	R	R	R	R	IS	S	S	S	S	S	S	S	R	S
27	L930605	S	R	S	S	S	S	IS	S	S	R	R	S	S	R	R	R	S	S	R	R	S	RI	R	S	R	R	R	RI	IS	S	S	S	S	S	S	S	R	S
28	AR494B-2-2	S	S	S	S	S	S	RI	S	S	S	RS	S	S	S	I	S	S	S	S	S	S	S	R	S	S	S	S	S	I	S	S	S	S	S	S	S	S	S
29	AR584A-3-1	S	R	S	S	S	S	I	S	S	R	R	S	S	S	R	RI	S	S	R	RS	S	IS	R	S	RI	R	R	I	RS	S	IS	S	S	S	S	S	RS	S
30	T95	RS	R	S	S	RS	R	R	R	R	RS	RS	S	R	S	RS	RI	RI	RS	RI	S	RI	RS	IS	IS	RI	RI	RS	RS	S	RS	RI	R	IS	I	RI	S	RI	RS
31	T96	S	R	S	IS	S	S	I	S	S	RS	RI	S	S	R	RI	R	S	S	IS	I	S	S	S	S	S	RS	RS	S	S	S	S	S	S	S	S	S	R	S
32	P91193D110	S	S	S	I	S	S	R	S	S	RI	R	S	S	R	S	R	S	S	RI	R	I	I	R	S	S	R	RI	R	R	S	R	I	S	S	S	S	RI	S
33	P91202RB1	RI	S	S	S	I	RI	R	I	RS	R	R	S	R	S	S	RI	S	I	R	IS	S	RS	R	S	S	R	S	RS	RS	RS	RI	I	RS	R	RS	RS	S	S

ADVANCED NURSERY EVALUATION FOR SOFT WHEAT MILLING AND BAKING QUALITY

Lab No.	Entry	ATLANTIC = Blacksburg, VA; Queenstown, MD; Plymouth, NC	MILLING QUALITY SCORE		BAKING QUALITY SCORE		COMBINED QUALITY SCORE		MICR T.W. LB/BU		SOFT. EQUIV		FLOUR YIELD		FLOUR PROT.		MICRO AWRC		COOKIE DIAM.		TOP GR.
		STANDARD =#1852, Caldwell	100.0	A	100.0	A	100.0	A	63.8		53.7		70.0		8.06		58.9		17.85		4
1951	1	CARDINAL	102.3	A	99.7	B	99.7	B	60.7	Q	51.6		71.5		8.75		55.1		17.82		5
1952	2	CALDWELL	100.0	A	100.0	A	100.0	A	63.8		53.7		70.0		8.06		58.9		17.85		4
1953	3	PIONEER 2548	97.6	B	93.3	C	93.3	C	61.3	*	57.1		69.0	*	7.76		58.1		17.32	Q	3
1954	4	Foster	105.1	A	100.7	A	100.7	A	62.0	*	55.0		73.9		8.94		53.6		17.70		4
1955	5	PA8769-158	107.4	A	110.0	A	107.4	A	61.1	Q	60.0		71.3		7.86		54.1		18.67		6
1956	6	IL 90-6364	105.6	A	102.8	A	102.8	A	61.6	*	55.9		71.6		7.84		54.7		17.76		5
1957	7	IL 90-7514	96.8	B	99.0	B	96.8	B	63.2		53.5		69.3		7.35		59.1		17.84		4
1958	8	GA 871339	99.2	B	93.9	C	93.9	C	60.8	Q	54.8		69.9		8.31		57.6		17.39	*	4
1959	9	VA 94-52-25	98.7	B	101.1	A	98.7	B	61.9	*	53.8		69.8		9.49		54.7		17.78		4
1960	10	VA 93-54-429	95.1	B	78.9	F	78.9	F	64.8		53.2		68.7	*	8.53		58.8		16.86	Q	3
1961	11	88288C1-6-1-2	97.0	B	100.0	A	97.0	B	62.4	*	50.4	*	69.9		10.49		52.2		17.90		4
1962	12	86958RC4-2-1-10	96.3	B	105.3	A	96.3	B	61.8	*	51.6		69.6		8.16		54.9		18.14		4
1963	13	KY 86C-1-8	99.9	A	64.2	F	64.2	F	62.2	*	47.4	Q	74.8		7.61		61.7	*	16.79	Q	4
1964	14	SE 1614-3	93.0	C	95.5	B	93.0	C	59.7	Q	57.1		68.0	Q	6.89		58.6		17.48	*	5
1965	15	G 3566	107.7	A	110.0	A	107.7	A	61.7	*	60.3		71.4		8.70		56.2		18.18		4
1966	16	G 3782	106.8	A	106.9	A	106.8	A	61.2	Q	58.2		71.2		8.29		55.6		17.94		4
1967	17	PA 8969-181	93.5	C	91.7	C	91.7	C	62.5	*	51.4		68.9	*	9.34		54.4		17.45	*	3
1968	18	PA 8769-160	101.3	A	103.5	A	101.3	A	60.7	Q	55.7		70.2		9.06		55.9		17.80		5
1969	19	A94-1048	98.0	B	90.0	C	90.0	C	62.8		50.6	*	70.1		9.02		56.6		17.41	*	3
1970	20	A93-227	104.7	A	98.9	B	98.9	B	64.5		52.9		71.8		8.76		54.9		17.72		3
1971	21	OH 536	103.4	A	102.9	A	102.9	A	59.8	Q	53.7		72.0		9.36		52.7		17.87		3
1972	22	OH 552	98.0	B	90.5	C	90.5	C	63.1		45.8	Q	70.9		9.25		55.7		17.67		3
1973	23	OH 546	104.8	A	107.9	A	104.8	A	62.7		54.1		71.4		8.56		54.2		18.09		5
1974	24	IL 89-6489	100.1	A	103.6	A	100.1	A	63.6		52.2		70.3		9.50		56.3		17.98		5
1975	25	L920043	101.1	A	93.8	C	93.8	C	63.9		53.4		70.3		9.32		58.8		17.56	*	3
1976	26	L920520	100.5	A	94.0	C	94.0	C	62.2	*	54.4		70.1		8.28		56.8		17.41	*	5
1977	27	L930605	94.0	C	94.5	C	94.0	C	63.4		55.1		68.3	Q	8.57		59.5		17.59	*	5
1978	28	AR 494B-2-2	103.7	A	81.9	E	81.9	E	62.6		53.1		71.1		8.56		57.1		16.90	Q	3
1979	29	AR 584A-3-1	105.2	A	108.7	A	105.2	A	61.8	*	55.2		71.4		8.00		56		18.07		5
1980	30	T95	100.8	A	95.0	B	95.0	B	61.7	*	55.8		70.0		8.42		59.4		17.57	*	5
1981	31	T96	91.1	C	92.9	C	91.1	C	60.8	Q	56.1		67.6	Q	8.18		59		17.41	*	3
1982	32	P91193D1-10-2	102.1	A	107.0	A	102.1	A	61.2	Q	55.9		70.4		9.28		56.6		17.96		5
1983	33	P91202RB1-3-3	91.3	C	89.0	D	89.0	D	62.7		51.1		68.3	Q	9.77		55.9		17.34	Q	3

data provided by P.L. Finney and J.E. Kinney, USDA-ARS Soft Wheat Quality Lab, Wooster, OH

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Seedling reaction of entries of the 1990-91 Uniform Southern Soft Red Winter Wheat Performance nursery

#	Cultivar or line	Reactions produced by NA race *											Postulated Seedling Lr genes
		CBTB	TFGL	MBGL	MBRL	MBGB	CBML	LLGG	BBBL	LBGG	TLGG	TDBL	LCBQ	
1	FL 302	;	3	3	3	;	3	;	3	;	;	3	3	10+ **
2	Saluda	3	3	3	3	3	;3	3	;	3	3	;2	;	11
3	Coker 9733	;	3	;	;	;	;	;	;	;	;	3	;	24
4	SC 840144	;1c	1c;	;	;1c	;1c	3	1c,-3	1c2	2;	;1c2	;1c2	;	3ka+
5	T 84-331	;	3	;	;	;	;	;	;	;	3	3;	;	1,2a
6	TX 76-40-2	;1c	3	3	3	;	3	;	3;	;	;	3	3	10
7	TX 82-185	;	3	3	3	;	3	;	3;	;	;	3	3	10
8	PSR-W64	3	3	3	3	3	3	3	3	3	3	3	3	0
9	VA 85-54-290	;	3	3	3	;1c	3	;	3	;1c	;	3	3	10
10	VA 87-54-558	;	3	3	3	;31c	;	3	;	3	3	;1c3	;	1,11
11	SC 850559	;	;	;	;	;	;	3	;	;	;1c3	;1c	;	9+
12	C 87-13-Wh	3;	3	3	3	3	;1c	3	;	3	3	;1c	;	11+
13	FL 8156-G76	;	3	;	;	;	;	;	;1c	;	1c;	;1c	;	2a,10,11
14	FL 8172-G98-L5	;	3	;-3	;	;	;	;	;	;	;	;1c1	;1c	2a,10,11
15	FL 85377-G3-26	;	3-;	;	3	3	;2	;	;2	3	3	3	;	+
16	AR 26413A	3	3	3	3	3	;1c	-	;	3	3	;1c2	;	11
17	AR 26413B	;	;	;1c	;	;	;	3	;	;	3	;	-	9+
18	SC 850236	3	3	3	3	3	3	3	3	3	3	3	3	0
19	PSR-W100	3	3	3	3	3	3	3	3;1c	3	3	3	3	0
20	PSR-W135	3	3	3	3	3	;1c	3	;	3	3	;1c	;	11
21	AL 870537	3	3	3	3	3	3	3	3	3	3	3	3	0
22	AL 881060	;	3	;	;	;	;	;	;	;	;	3	;	24
23	MD 80004-62	3	3	3	3	3	3	3	3	3	3	3	3	0
24	ABI 87-6876	;	3	3	3	3	;	;	;	;	;	3	;	1,3
25	ABI 85*1-1	;	2c1;	;1c	;	;	;	;	;	;	;	;1c2	3	+
26	ABI 85*5186-1	;	1c2	;	;	;	;	;	;	;	;	;1c	-	+

* Single Lr genes tested =
1,2a,2c,3,3ka,9,10,11,16,17,18,24,26,30.

Virulence formula:

CBTB = Lr3,3ka,11,17,30
TFGL = Lr1,2a,2c,3,10,11,24,26
MBGL = Lr1,3,10,11
MBRL = Lr1,3,3ka,10,11,30
MBGB = Lr1,3,11
CBML = Lr3,3ka,10,30
LLGG = Lr1,9,11,18
BBBL = Lr10
LBGG = Lr1,11,18
TLGG = Lr1,2a,2c,3,9,11,18
TDBL = Lr1,2a,2c,3,10,24
LCBQ = Lr1,10,18,26

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** + = Lr gene(s) present but unable to identify with these Lr virulence combinations.

HESSIAN FLY *

Entry #	Identity	Biotype			
		E	L	B	GP
1	FL 302	5 - 1	0 - 11	0 -13	0 - 14
2	Saluda	8 - 4	0 - 11	0 - 14	15 - 0
3	Coker 9733	0 - 10	0 - 13	0 - 13	0 - 16
4	AR 26415	0 - 9	0 - 10	0 - 12	12 - 2
5	ABI 85*1	0 - 10	0 - 8	0 - 15	0 - 14
6	GA 79118	1 - 8	0 - 11	0 - 14	0 - 15
7	GA 781197-3	4 - 6	1 - 7	0 - 12	9 - 3
8	SC 840144	0 - 6	0 - 1	0 - 12	15 - 0
9	SC 840309	0 - 10	0 - 14	0 - 16	0 - 13
10	FL 85363-G21-6	12 - 0	9 - 1	15 - 0	13 - 0
11	MD 75266-46	0 - 8	0 - 11	0 - 12	0 - 11
12	PSR-WS1	0 - 8	0 - 14	0 - 11	12 - 1
13	NC 84-93	9 - 1	0 - 14	0 - 13	7 - 7
14	CL 850643	2 - 10	0 - 12	0 - 12	12 - 0
15	MD Blend	0 - 9	0 - 15	0 - 13	13 - 3
16	T 84-331	2 - 9	0 - 13	0 - 12	0 - 13
17	TX 76-40-2	0 - 14	0 - 14	0 - 13	0 - 14
18	TX 82-185	0 - 12	0 - 13	0 - 14	0 - 18
19	ABI 85*5377	1 - 10	0 - 12	0 - 14	0 - 15
20	ABI 86-5941	8 - 0	0 - 15	11 - 2	15 - 1
21	PSR-W63	13 - 1	0 - 12	0 - 15	16 - 0
22	PSR-W64	0 - 15	0 - 19	0 - 13	0 - 16
23	VA 85-54-290	0 - 9	0 - 15	0 - 12	0 - 16
24	VA 87-54-558	0 - 13	0 - 14	0 - 15	15 - 0
25	SC 850559	0 - 15	0 - 16	0 - 16	0 - 16
26	C 87-13-Wh	12 - 0	0 - 14	0 - 12	0 - 15
27	C 86-32	0 - 12	0 - 13	0 - 13	0 - 14
28	LB 247	11 - 0	0 - 15	13 - 0	13 - 0
29	GA 83030-1C-1-1	0 - 13	0 - 14	0 - 14	0 - 14
30	GA 83030-1C-2-2	0 - 13	0 - 16	0 - 18	0 - 15
31	FL 8156-G76	3 - 8	0 - 12	0 - 13	0 - 14
32	FL 8172-G98-L5	1 - 6	0 - 9	0 - 10	8 - 0
33	FL 85377-G2-21	7 - 4	4 - 7	8 - 5	7 - 6
34	AR 83-21-10	0 - 15	0 - 14	0 - 14	0 - 15

Data provided by Greg Safranski, USDA-ARS, Lafayette, IN

* number of plants resistant vs. susceptible

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)

University of Georgia Research Foundation, Inc.
Florida Agricultural Experiment Stations

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

GA871339E18

3. VARIETY NAME

Roberts

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*

Boyd Graduate Studies Research Center
Room 630
Athens, GA 30602-7411

5. TELEPHONE *(include area code)*

706-542-6512

6. FAX *(include area code)*

706-542-3837

7. PVPO NUMBER

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [X] YES [ ] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO **If no, give name of country**

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[X] YES [ ] NO **If no, give name of country**

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

SEE ATTACHED SHEET

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.

According to the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0581-0055. The time required to compete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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To file a complaint, write the Secretary of Agriculture, U.S. Department of Agriculture, Washington, D.C. 20250, or call 1-800-245-6340 (voice) or (202) 720-1127 (TDD). USDA is an equal employment opportunity employer.

STD-470-E (07-97) *(Destroy previous editions).*
Electronic version designed using WordPerfect InForms by USDA-AMS-IMB.

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Exhibit E
Statements of Applicant's Ownership

Roberts

The variety for which plant variety protection is hereby sought is owned jointly by the University of Georgia Research Foundation, Inc. (UGARF) and the Florida Agricultural Experiment Stations, University of Florida (FAES).

Ownership by UGARF in the variety for which plant variety protection is hereby sought is based on the Patent Policy approved by the Board of Regents of the University System of Georgia on June 9, 1982, in which the Board of Regents assigned to the University of Georgia Research Foundation, Inc. all rights in intellectual property developed or created by employees at The University of Georgia, one of the universities of the University System of Georgia. Rights of novel plant varieties developed at The University of Georgia, including 'Roberts', are covered by said Patent Policy. As employees of The University of Georgia, Jerry W. Johnson, Barry Cunfer, and G. David Buntin, pursuant to said Patent Policy, have assigned their rights in 'Roberts" to the University of Georgia Research Foundation, Inc.

Ron Barnett and Paul Pfahler are employees of the Florida Agricultural Experiment Stations, the University of Florida.

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